

10 a memory coupled to the controller comprising a computer-readable medium having a
11 computer-readable program embodied therein for directing operation of the system, the computer-
12 readable program comprising:

13 instructions for controlling the gas source and the energy source to convert a portion of a
14 gas supplied by the gas source into a plasma comprising plasma ions and radicals,
15 wherein the first reaction chamber is separated from the second reaction chamber by a
16 distance equivalent to the lifetime of the ions at a plasma generation rate such that the radicals react
17 with a substrate in the second chamber in a film conversion step.

1 20. (Amended) A machine readable storage medium containing executable program
2 instructions which when executed cause a digital processing system to perform a method of
3 reacting a plasma with a substrate, comprising:
4 generating a plasma from nitrogen comprising radicals and ions in a first chamber; and
5 transferring the plasma radicals via a distance equivalent to the lifetime of the ions into a
6 second chamber substantially free of ions.